

HUBUNGAN KESANGGUPAN KARDIORESPIRASI DENGAN KADAR HORMON TESTOSTERON PADA MAHASISWA FAKULTAS KEDOKTERAN UNIVERSITAS JENDERAL SOEDIRMAN

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ABSTRAK

Kesanggupan kardiorespirasi merupakan salah satu komponen kebugaran fisik yang menilai kemampuan jantung, paru-paru, dan pembuluh darah. Mahasiswa dengan tingkat kesanggupan kardiorespirasi yang baik dapat memberikan pengaruh positif terhadap fisiologi hormon. Kesanggupan kardiorespirasi dapat meningkatkan kadar hormon testosteron melalui mekanisme suplai O₂ yang optimal sehingga menurunkan produksi ROS sebagai substansi yang menekan produksi hormon testosteron. Beberapa penelitian yang telah dilakukan menunjukkan hasil yang tidak signifikan antara kebugaran fisik terhadap kadar hormon testosteron sehingga diperlukan penelitian dengan metode dan instrumen pengukuran yang berbeda. Tujuan penelitian ini adalah untuk mengetahui hubungan kesanggupan kardiorespirasi dengan kadar hormon testosteron. Penelitian ini menggunakan desain *crosssectional* dengan uji korelasi *Pearson*. Subjek penelitian adalah 44 mahasiswa laki-laki Fakultas Kedokteran Universitas Jenderal Soedirman yang dipilih secara *consecutive sampling*. Semua subjek penelitian berusia antara 18-25 tahun. Metode *Queen's College Step Test* digunakan untuk mengukur kesanggupan kardiorespirasi dengan satuan ml/kg/menit. Kadar testosteron saliva diukur menggunakan teknik *Salimetric Testosterone Saliva Enzyme Immunoassay*. Hasil penelitian menunjukkan bahwa kadar VO₂ Maks memiliki rerata 59,3±6,5 mL/kg/menit. Kadar hormon testosteron memiliki rerata 47,9±27,4 pg/mL. Uji *Pearson* menunjukkan nilai $p=0,95$ sehingga terdapat tidak terdapat hubungan signifikan antara kesanggupan kardiorespirasi dengan kadar hormon testosteron. Kesimpulan penelitian ini adalah kesanggupan kardiorespirasi tidak berhubungan dengan kadar hormon testosteron pada mahasiswa Fakultas Kedokteran Universitas Jenderal Soedirman.

Kata Kunci: *Queen's College Step Test*, VO₂ Maks, Kesanggupan Kardiorespirasi, Testosteron

**RELATIONSHIP OF CARDIORESPIRATION WITH TESTOSTERONE
HORMONE LEVELS IN FACULTY OF MEDICINE STUDENTS,
GENERAL SOEDIRMAN UNIVERSITY**

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ABSTRACT

Cardiorespiratory ability is one component of physical fitness that assesses the ability of the heart, lungs, and blood vessels. Students with a good level of cardiorespiratory ability can have a positive influence on hormone physiology. Cardiorespiratory ability can increase testosterone levels through an optimal O₂ supply mechanism, thereby reducing the production of ROS as a substance that suppresses the production of the hormone testosterone. Several studies that have been conducted have shown insignificant results between physical fitness and testosterone levels so that research with different measurement methods and instruments is needed. The purpose of this study was to determine the relationship between cardiorespiratory ability and testosterone levels. This study used a cross-sectional design with Pearson's correlation test. The research subjects were 44 male students from the Faculty of Medicine, Jenderal Soedirman University, who were selected by consecutive sampling. All study subjects were between 18-25 years old. The Queen's College Step Test method was used to measure cardiorespiratory ability in units of ml / kg / minute. Salivary testosterone levels were measured using the Salimetric Testosterone Saliva Enzyme Immunoassay technique. The results showed that the VO₂ max level had a mean of 59.3 ± 6.5 mL / kg / minute. Testosterone levels averaged 47.9 ± 27.4 pg / mL. The Pearson test showed a p value = 0.95 so that there is no significant relationship between cardiorespiratory ability and testosterone levels. It can be concluded that cardiorespiratory ability is not related to testosterone levels in students of the Faculty of Medicine, Jenderal Soedirman University.

Keywords: *Queen's College Step Test, VO₂ Max, Cardiorespiratory Ability, Testosterone*